

THE DELAWARE AND HUDSON RAILROAD BULLETIN



"*the*
D&H"

MARCH 1, 1937

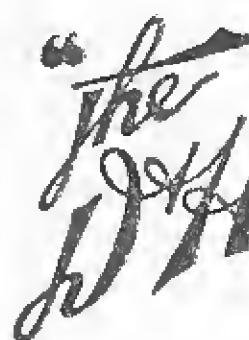
Wreckers

*I WATCHED them tearing a building down,
A gang of men in a busy town,
With a ho-heave-ho and a lusty yell,
They swung a beam and the side wall fell.*

*I asked the foreman, "Are these men skilled,
And the men you'd hire if you had to build?"
He gave a laugh and said, "No, indeed!
Just common labor is all I need.
I can easily wreck in a day or two
What builders have taken a year to do."*

*I thought to myself as I went my way,
Which of these roles have I tried to play?
Am I a builder who works with care,
Measuring life by the rule and square?
Am I shaping my deeds to a well-made plan,
Patiently doing the best I can?
Or am I a wrecker, who walks the town,
Content with the labor of tearing down?*

—H. S. HARP.



The

DELAWARE AND HUDSON RAILROAD

CORPORATION



BULLETIN

Double-tracking the A. & S.

Started "Boomer" on 47-year Service With Delaware and Hudson Railroad

EXPERIENCED railroad men had no difficulty in getting work in the seventies and eighties when business was good, trains were short, and there were sometimes more jobs than men to fill them. Hundreds of wandering train and engine service men—"boomers" they called them—went from road to road, remaining only as long as business was brisk, moving on again when runs became infrequent. Such a railroader was RALPH A. MEAD, who switched back and forth between the Erie and Delaware and Hudson six times in nine years before beginning his final term of 47 years' continuous service with the latter.

MR. MEAD—known so long to his fellow Susquehanna Division employes as "Gus," from his middle name Augustus, that many probably did not know his first name was RALPH—was born at Sheridan, Chautauqua County, N. Y., the son of an Erie Railroad conductor, who later transferred to the Delaware and Hudson and was for over 20 years in charge of Susquehanna Division passenger trains 8 and 9.

At the age of seventeen MR. MEAD began his 56-year railroading career as a freight train brakeman on the Erie, running between Hornell and Salamanca,



RALPH A. MEAD

the 81-mile trip being made in about six hours. Two years later, in 1881, he followed his father to Oneonta and was hired as trainman by Assistant Superintendent and Train Dispatcher P. H. Connors. For a few months he was "on the rounds," running from Oneonta to Delanson, Nineveh, and Binghamton, with Conductor William Lord.

Rather than face the uncertainty of work on the extra list, MR. MEAD returned to the Erie for two years, coming back to work on our Susquehanna Division in 1883, with Conductor Harry Judd. When business declined in 1885 he again left to work on the Erie and the Buffalo, Rochester and Pittsburgh, returning to the Delaware

and Hudson for the last time, January 1, 1887.

His previous railroading experience gained him promotion to the rank of conductor in the remarkably short time of four months after entering the company's employ. The first double track on the division was then being laid between Afton and Bainbridge and MR. MEAD was placed in charge of the gravel train used on that project. Lacking power shovels and other equipment, all the work of making cuts and fills was done by a gang of from 80 to 100 laborers equipped with picks and

shovels. In making fills, dirt from the nearest cut or gravel bank was loaded on the string of ten small flat cars, hauled to the cut, and shoveled off, all by slow manual labor. On a particularly good day they might finish a ten-car length of track; at other times they spent several days in one spot. Later that year his train was moved to Sidney, where they worked for three months, then to Oneonta, where the double-tracking was continued toward Colliers until halted by cold weather.

There were then about twenty crews working "on the rounds" out of Oneonta in addition to the seven or eight regularly assigned crews operating on schedules shown in the timetable. Trains of three different classes were in operation at that time: first class included passenger and scheduled or rush freight trains; second class trains were other freights, carrying coal, ore, and other non-perishable commodities; all others, including extra freights, were third class.

CONDUCTOR MEAD'S first regular run was on fast freight trains 91 and 86, operating between Binghamton and Mechanicville. On the northward trip, with No. 91, they left Binghamton at 1 A. M. with a trainload of perishable freight, making the 148-mile run in 10 hours. Returning as No. 86, with a 500-class passenger engine and 17 loaded cars, they were scheduled to leave Mechanicville at 12:18 A. M., reaching Binghamton at 7 A. M.

MR. MEAD later took charge of the Sidney drop train, doing the local switching between Oneonta and Sidney, as well as the interchange work with the Ontario and Western, switching at various industrial plants and the car repair tracks at Sidney.

In 1923 he bid in an Oneonta-Wilkes-Barre fast freight run which he held two years; he then entered the Oneonta-Mechanicville fast freight service. His last run was on the "Comet," fastest freight on the division, which then left Oneonta at 2:20 P. M. and had to be delivered in the Boston and Maine's Mechanicville yard by 6 P. M.

The most thrilling experience in his 56 years of railroading came early in his career and almost cost his life. While switching on the Erie he fell between the rails but managed to lie perfectly still while five cars were passing over him. In those days before the advent of air brakes, there was more clearance beneath a car, and he was untouched.

MR. MEAD is a member of The Delaware and Hudson Veterans' Association and the first Methodist Church of Oneonta. He and Mrs. Mead, who have been married 45 years, have two sons, both railroad men: Stanley is a New York Central conductor at Cleveland, Ohio; and EDWARD is a Delaware and Hudson trainman at Oneonta.

WANTED

EXTRA copies of the January *Bulletin* are urgently needed to fill a request for 200 which cannot be supplied from our normal reserve. Distribution points or others having copies left over are requested to send them to the Supervisor of Publications, Albany. Readers who have complete files should not break them in order to assist in this instance, however.

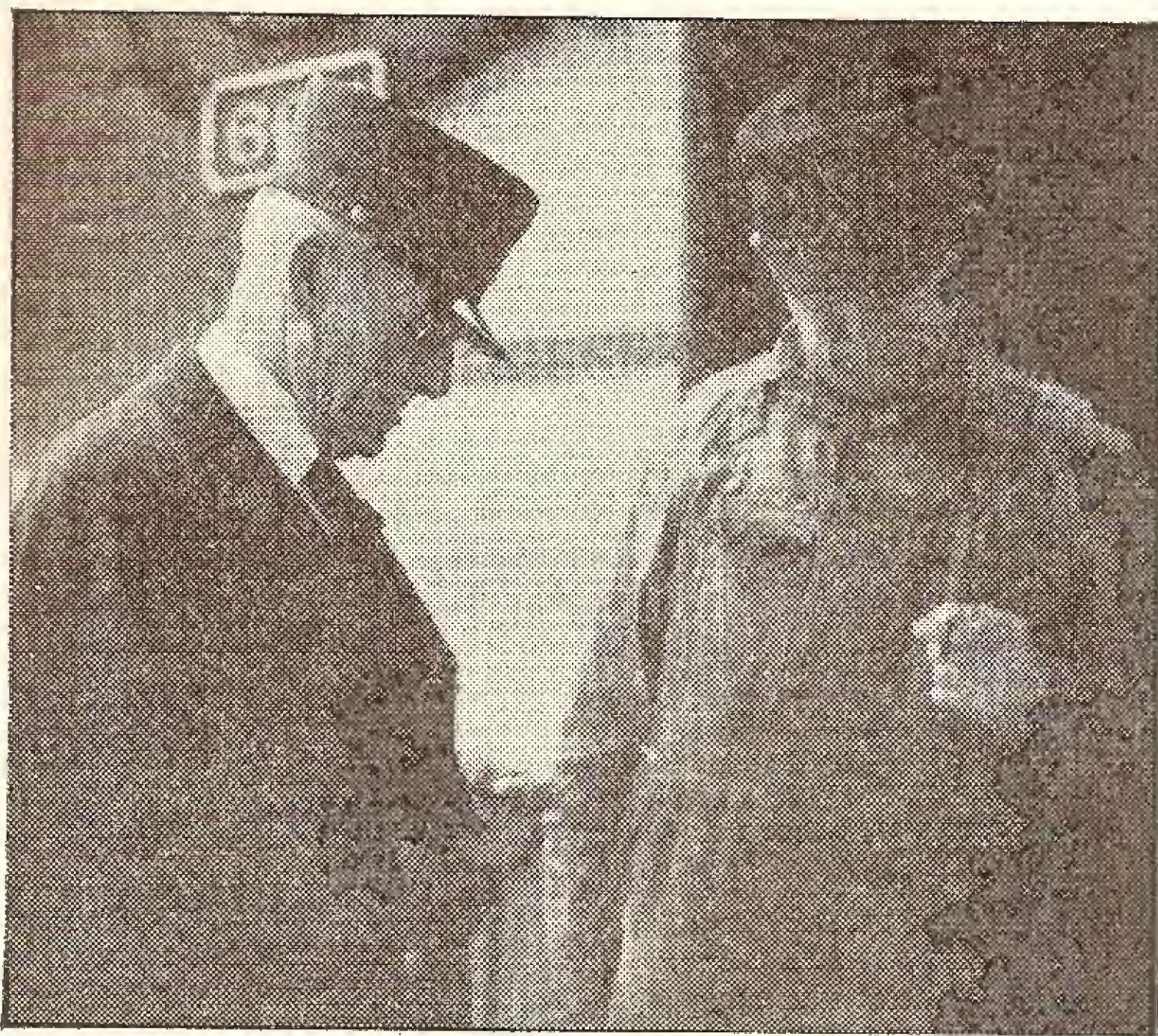
The Cover

THE uncertainty and changeability of the weather make it an outstanding topic of conversation. Studies of sun spots, weather cycles and all other sources of information indicated that the winter of 1936-37 would beat all records for cold and all that goes with it. It has, in California, where citrus orchards have been ruined and vegetable gardens destroyed by killing frosts in the southern part of the state. Farther north, in the Sierras, heavy snowfalls tied up transportation of all kinds. The Southern Pacific Company was forced, like the eastern railroads, to cancel snow trains on at least one week-end, but because of too much snow rather than the lack of it.

Widespread disappointment among eastern wintersports enthusiasts is shared to an even greater degree by the railroads and the communities which had gone to considerable expense to provide facilities for the enjoyment of patrons of our snow trains. Just as a reminder of the good times had last winter, and in anticipation of what is in store for next, we offer the photograph on the cover, a group of "Snow-trainers" at North Creek a year ago.

"Number One" Near Willsboro





"On Time!"

A Peep Behind the Scenes
Tells Why Your Watch
Functions As It Does. ::

a synthetic gem that provides one of the essential bearings of the timepiece. Another minute part is of steel, the pallet arbor. Unless this is accurately made and fitted the watch will not keep good time. This holds for many others of the tiny parts.

Until 1833 America looked to Europe for its watches. A factory started in Connecticut in that year failed as did several other attempts to compete with the Swiss manufacturers, despite the drawback that the foreign handmade watches did not have interchangeable parts and consequently were difficult and costly to repair. Subsequently several watch factories were established to build timepieces from interchangeable parts made under methods of mass production.

Labor is the most expensive part in a watch, as in many other items. The hairspring is made of



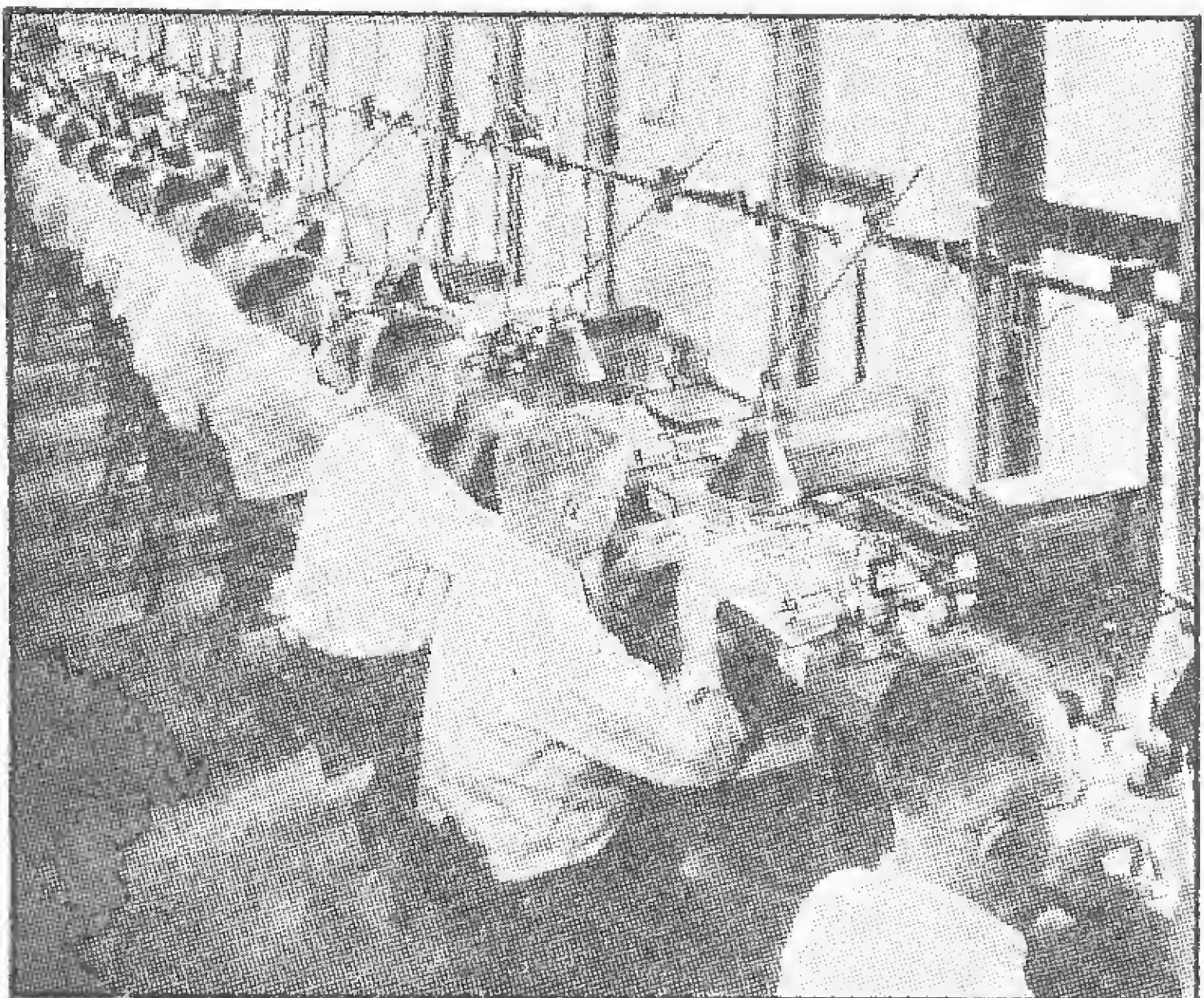
Threading Holes in Watch Plates

If you were asked to name the most important factor in railroading, what would it be? Time? Right! Modern railroad operation would be impossible without standard time and instruments capable of determining it accurately and instantly. No one knows better than your railroader the importance of having his watch correct. Delaware and Hudson employes in train service and related departments must have watches which do not vary more than two seconds daily, a maximum of 30 seconds being allowed between periodic watch inspections which are required twice each month. A few moments with pencil and paper will show that this figures out to an allowable variation of about 2/1000ths of one per cent.

Yet the necessity for such accuracy is readily apparent when the rigid requirements of modern railroading are considered. The timetable for at least one train, the New Haven's *Comet*, shows to the second when it is due to pass various stations along its route.

From an article entitled "The Kingdom of Little Things" in a recent issue of *Oil-Power*, publication of Socony-Vacuum Oil Company, we learn that a good watch—a seven jewel watch—is composed of 138 parts not including the case. This would not be accepted for railroad use, however. A 23 jewel watch which meets the requirements contains over 200 parts, about half of which are screws. Some of these are quite sizeable, that is, you can see the threads with the naked eye. Many of them are unbelievably tiny. Some are so small that it would take 20,000 of them to fill an ordinary thimble. Enough of these to keep a workman busy for a day look like no more than a pinch of gold dust on a bit of paper on his bench.

Even smaller than these screws is the roller jewel,



Watch Assembling

steel, a pound of which may be drawn into a wire eight miles long. In its completed form it is worth 8,000 times as much as the raw material. Starting about the same size as the diameter of the lead in a pencil, it is drawn in 46 successive operations until it is flat and as fine as a human hair, the last drawings being through tiny holes drilled in diamonds. It is then cut, coiled into springs, chemically treated and tempered.

Several hundred machines are needed to turn out the myriad parts which go into the making of watches, and something over 7,000 different kinds of tools are employed. In the watch industry anything is a machine that is operated by a motor. It is a tool if the power is supplied by the operator.

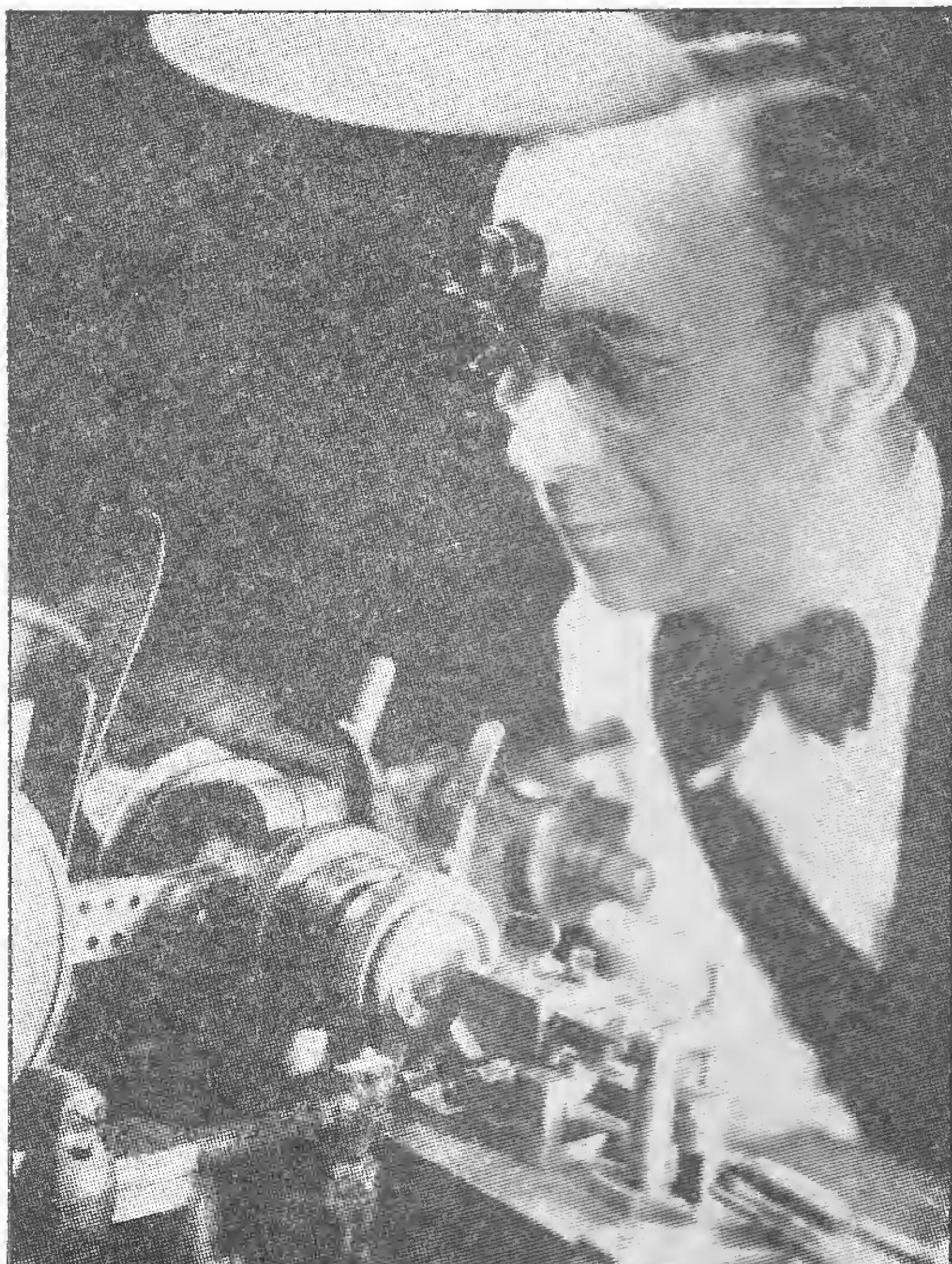
Screw machines turn out 15 pieces a minute. The visitor can see the stream of cutting oil. He can see the cutting tools and, perhaps the wisp of golden thread that winds away as the thread is cut on the tiny shaft. He will have reason to be proud of his eyes if he can see the screw that is being made—to say nothing of the thread. The whole screw machine he could almost hold in his lap.

Once upon a time jewels were really precious stones. A watch-maker in 1704 first provided almost perfect bearings for his watches by drilling diamonds, rubies, sapphires and other precious stones. Today synthetic rubies, garnets and sapphires are widely used because the artificial stones are more uniform than the real ones. One of the persistent ideas about watches is that the jewels are valuable. They are, but because of the important work they do rather than their intrinsic value. But for the labor of shaping and setting them the jewels in your watch would be worth but a few cents.

One of the most difficult jobs in the making of a watch is the setting of the jewels, each of which must be secured in a tiny collar of brass or some other material which is in turn fitted into an opening in some part of the watch where it acts as a bearing for the end of some shaft or pivot. The holes in the jewels are made with drills of hairlike slimness, some about $4/1000$ -inch in diameter. Gauges which are used to test the accuracy of this operation are checked against a standard every hour.

As with the members of the human body, it is difficult to say which is the most important. If any part be called the "heart" of the watch it is the balance wheel. Its rim is formed by welding a circle of brass to the outside of a similar circle of steel, the brass being twice the thickness of the steel, which is secured to the spokes and the hub. The combination steel-and-brass rim is cut through in two places opposite each other. Now brass expands more rapidly than steel when heated. When the brass expands and tends to enlarge the wheel, thus causing it to run more slowly, the steel segments draw the ends of the brass toward the center, thus preserving the same diameter regardless of temperature changes. Quite a trick, but there is more to the balance wheel. In the rim are a score or more of tiny holes, each threaded so that it can receive

(Continued on page 45)



Dial Engraving

Government Ownership: What It Means To You, Personally

GOVERNMENT ownership of the railroads. What would it mean to you as an individual? Have you ever stopped to try to think the thing through to its conclusion? The daily papers have from time to time carried items regarding the activities of a comparatively small but active group that is working to put the railroads completely under government control. It is this same group which has opposed every move calculated to enable the roads to earn their way in fair competition with other forms of transportation, meanwhile attempting to put upon the bankers the blame for the bankrupt condition to which many railroads have been reduced under government regulation during the past thirty years.

It is not the purpose of this article to argue this phase of the matter. Let us concern ourselves with what affects us directly, in other words, mind our own business. How would government ownership affect you, whether you are a superintendent, agent, train service man, trackman or perhaps not even a railroad employe?

Under government operation political appointments and influence may be expected to displace the present system of rewarding long service according to seniority rules. Of course you will be told that this will not be so, but have you read about the plans now on foot to revamp the postal system in exactly this way? The papers have reported it frequently in the last few months. New legislation is to provide ways of "getting around" the civil service regulations.

To those who still have implicit faith in the infallibility of "the government," two things may be pointed out. First, our government has in the past borrowed large sums. Suppose you loaned it \$1,000 by buying a bond, only to be given \$590 in full payment of the debt as was done recently. Second: The Pension Act.

The railroad pension act has now been in effect long enough for many of us to realize all too well that it offers far less than the pension plans formerly in effect on many roads and toward which the employe contributed nothing, whereas he now pays through a long period of years in order to gain less protection for himself than could be bought for the same amount from a life insurance company, and none for his family in the event of his death.

Government operation of rail lines is nothing

new. It is common in Europe. Yet none of the government-owned roads can compare in efficiency of operation with ours.

In Los Angeles a municipal power plant operated for a time in competition with a privately owned company. Under exactly similar conditions the same rates were charged by each. The only difference lay in the fact that, where the private company paid close to a million dollars annually to the tax collectors, the city plant paid not a cent. Nevertheless the voters decided to have the city borrow money to buy up the taxpaying company so it could be operated by the municipality. Someone will have to make up for the taxes which will no longer be paid under city ownership, as well as paying the interest and principal of the loan which made the purchase possible.

Similarly, in normal times, the railroads pay taxes of between 250 and 350 million dollars each year. Their school taxes alone educate 1,600,000 children. You, John Citizen, will have to make this up under government ownership. You own no property? You pay just the same. Higher rents, higher prices for food, clothing and other necessities and luxuries are bound to follow. You now work one day in every four to support the government. Every extension of its activities adds to your load. Incidentally the railroads represent an investment of over 25 billion dollars. If the government is to pay anywhere near a fair price for them it will nearly double the national debt.

A higher standard of living prevails in the United States today than anywhere else in the world. Why? Because we produce more of the necessities and comforts of life per man or woman employed than any other country. Why? Because we have put machinery and power to work instead of carrying the load on our backs or dragging it behind us. The railroads are the principal reason for our prosperity in the past and they will continue to be in the future, since without them the other industries could not exist on their present grand scale of operations. If the railroads are to prosper they must continue to increase their efficiency, a thing which will not come to pass under government ownership judging by the experience of other countries.

It is difficult to understand how very many railroaders or citizens not connected with the roads can

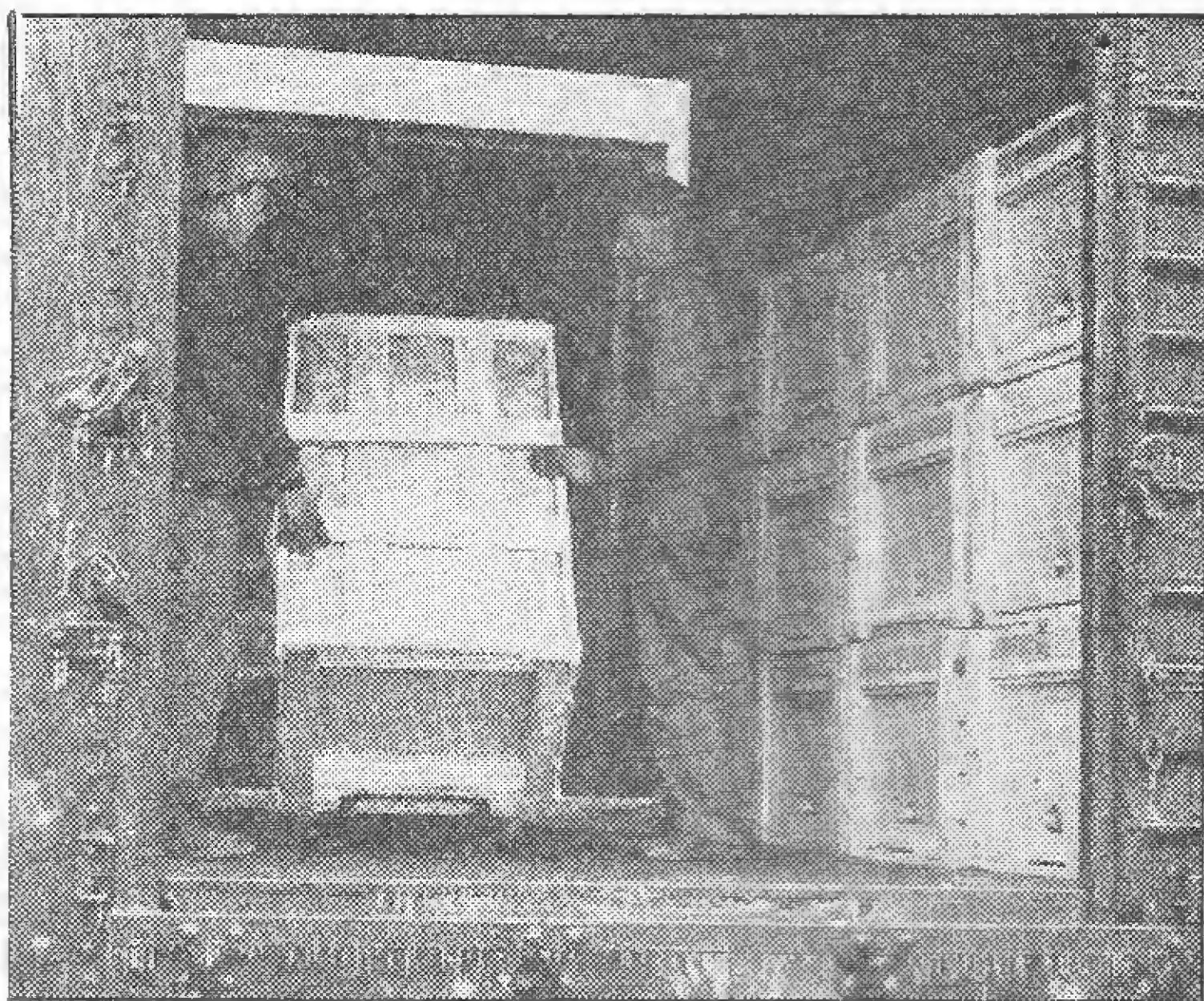
(Continued on page 43)

A Cool 300!

Cobleskill Concern's Daily Output of Modern Ice Refrigerators Has Nation-wide Distribution.

THE ice refrigerator is staging a comeback. Staggered by the combined blows of the depression and competition with mechanical units, the manufacturers realized that three things must be done if they were to regain even a part of the market: a box would have to be designed which would cut ice consumption to a minimum without sacrificing efficiency, new sales outlets would have to be found to replace the furniture and department stores partially lost to the mechanical refrigerator, and the new units would have to be styled in the modern mode. The old-fashioned, all-wood, poorly-built box, in which the ice cake melted on all six sides, rapidly shrinking to a small cone in the center of the ice compartment, was definitely out.

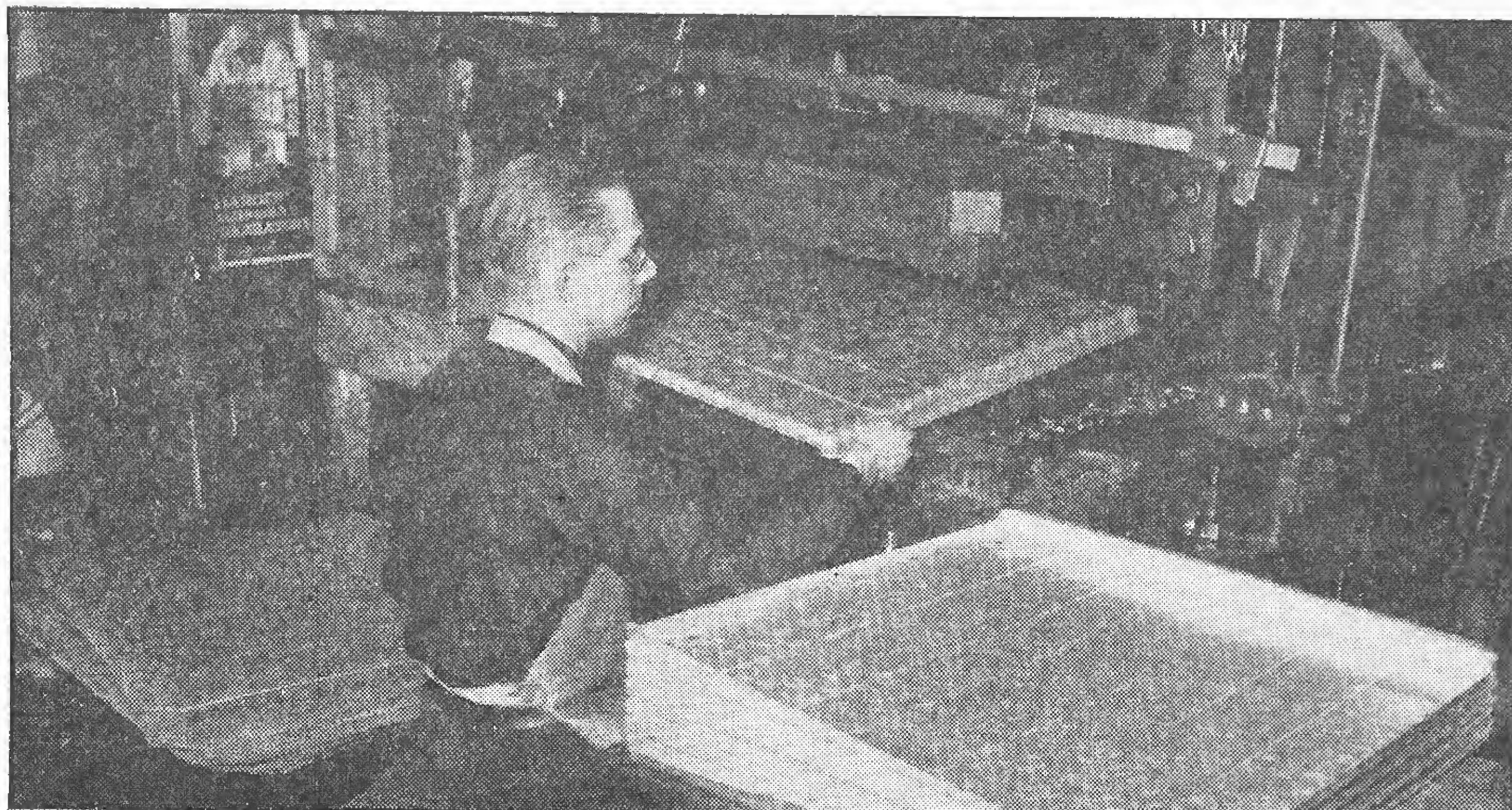
So successful were they in solving these problems that the Harder Refrigerator Corporation, located on our line at Cobleskill, N. Y., alone produced 40,000 units in 1936, and is building 300 a day at present, working day and night shifts to keep pace with the demand.



On Their Way

In appearance, the modern ice box is scarcely distinguishable from its mechanically-operated competitor. The 1937 models are so well designed and constructed that even in the largest household models one 100-pound cake of ice will maintain a temperature of 45° F. for from five days to a week. Ice manufacturers and distributors are co-operating to boost sales volume with very satisfactory results.

Without entering an argument on the merits of the two types, the ice refrigerator has certain distinct advantages. The initial cost of the ice unit is considerably lower; there are no moving parts, hence absolutely noiseless operation and no maintenance cost; research has produced a box in which the ice melts on the bottom only, giving even re-



Stamping Door "Pans"

frigeration until the cake is only one-quarter of its original size; there is a constant circulation of air in the food compartment; food is kept moist by the melting ice and therefore does not shrink; and the water dripping from the ice carries away with it a large percentage of the food odors generated in the storage compartment. Its advantages beyond the power lines are obvious.

To maintain the 300-units-a-day production schedule at the Harder plant, the job of building refrigerators was broken down into approximately 300 steps, each of the 325 employes performing his single operation on three refrigerators every two minutes of the working day.



Preparing Balsam Wool Insulation

Actual production begins in the metal- and wood-working departments where various pieces are cut and shaped. The frame is made up of 63 pieces of ash and white pine, all of which are machine made. Aside from the insulating material, the balance of the box is of metal, all parts being cut, stamped, and shaped on the premises from sheets of galvanized steel or galvannealed steel, an alloy designed especially to hold a coat of paint. To produce the materials for a single box requires 50 metal-working operations: cuttings, stampings, punchings, and shapings.

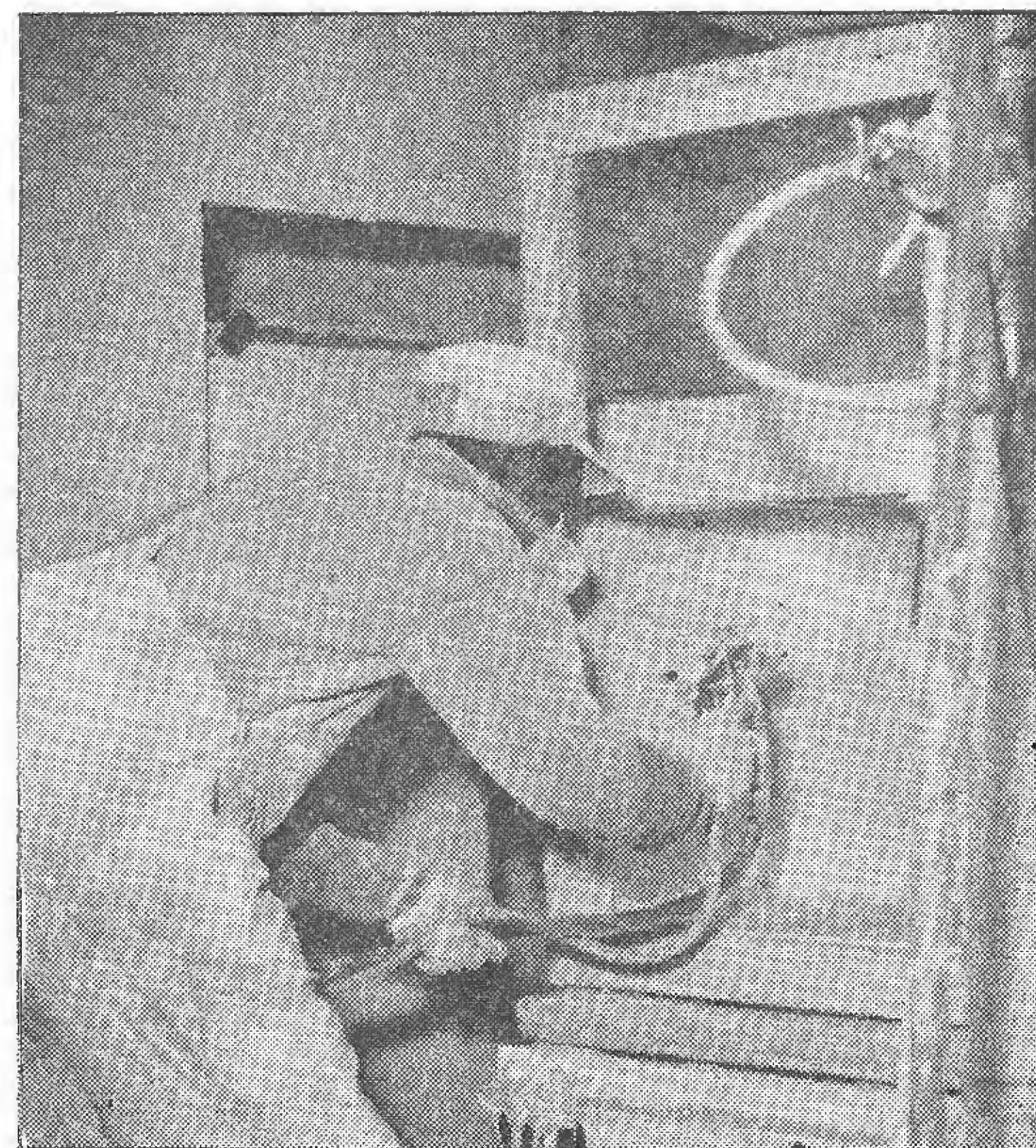
Under the present schedule the plant consumes an average of three carloads of sheet metal per week. The materials, which must be of exactly the correct size and shape to insure an air-tight fit, are distributed to the points along the assembly line where they enter into the manufacturing process.

The first operation is the spot welding of the metal pieces which form the food compartment of the finished refrigerator. The welder holds them in the proper relative position over an electrode projecting up through a table, touches a lever with his foot, a second electrode swings down, a spark flies, and the two pieces are joined permanently.

Meanwhile another workman has assembled the members of the back of the frame, to which a third man now attaches the metal food compartment. This unit is then placed on a thick cardboard skid lying on the roller conveyor line, and it starts on through the plant.

At intervals of a few feet men are stationed, each ready to perform a single operation, all so well timed that there is no interruption of the movement along the line. In successive steps the frame is completed, hooks are inserted for shelves, and the drain pipe is placed.

The unit is now ready to receive the insulation, upon which depends the efficiency of the completed refrigerator. Cork, formerly considered the most satisfactory insulating material, has now been replaced by minutely shredded balsam wood. Heavy paper bags of exactly the size of the side, top, and bottom openings, are machine-filled with the insulation as it comes from the filling machine. The bags are then sealed with an asphalt preparation to exclude water which would destroy the insulating value of the balsam wool.



Three Coats of Paint Sprayed On

After the insulation has been placed in the space between the frames, the metal outside cover is applied. The back is of galvanized steel, while the sides and doors are of galvannealed steel.

By this time each unit has taken on the appearance of a refrigerator. With the sides complete, each box is placed upright on a "dolly," a wooden skid slightly larger than the box itself, to prevent the units striking each other as they move along the line. The dollies have a hole at each end in which "U"-shaped steel couplers can be inserted to link groups together when necessary, such as to enter or leave the paint baking ovens.

At frequent intervals each unit is inspected for defects in construction.

The assembly line ends at an elevator which lifts the boxes to the second floor one at a time. Upstairs they roll out on a second line of conveyors, the lift returning automatically for another load.

Painting the refrigerators once presented a difficult problem; after a short period in service, particularly in the south, the finish chipped off. Research showed that this was caused by the presence of oil on the metal at the time of painting. Even a minute quantity caused subsequent peeling. By washing the surface with gasoline just before painting this difficulty was eliminated.

Dirt in the air in the paint room likewise plagued plant officials—it was virtually impossible to turn out a satisfactory paint job in a plant which also housed a wood mill and other dust-creating operations. Eventually the dirt problem was overcome by the installation of a ventilating system which supplies 50,000 cubic feet of air per minute to the paint department.

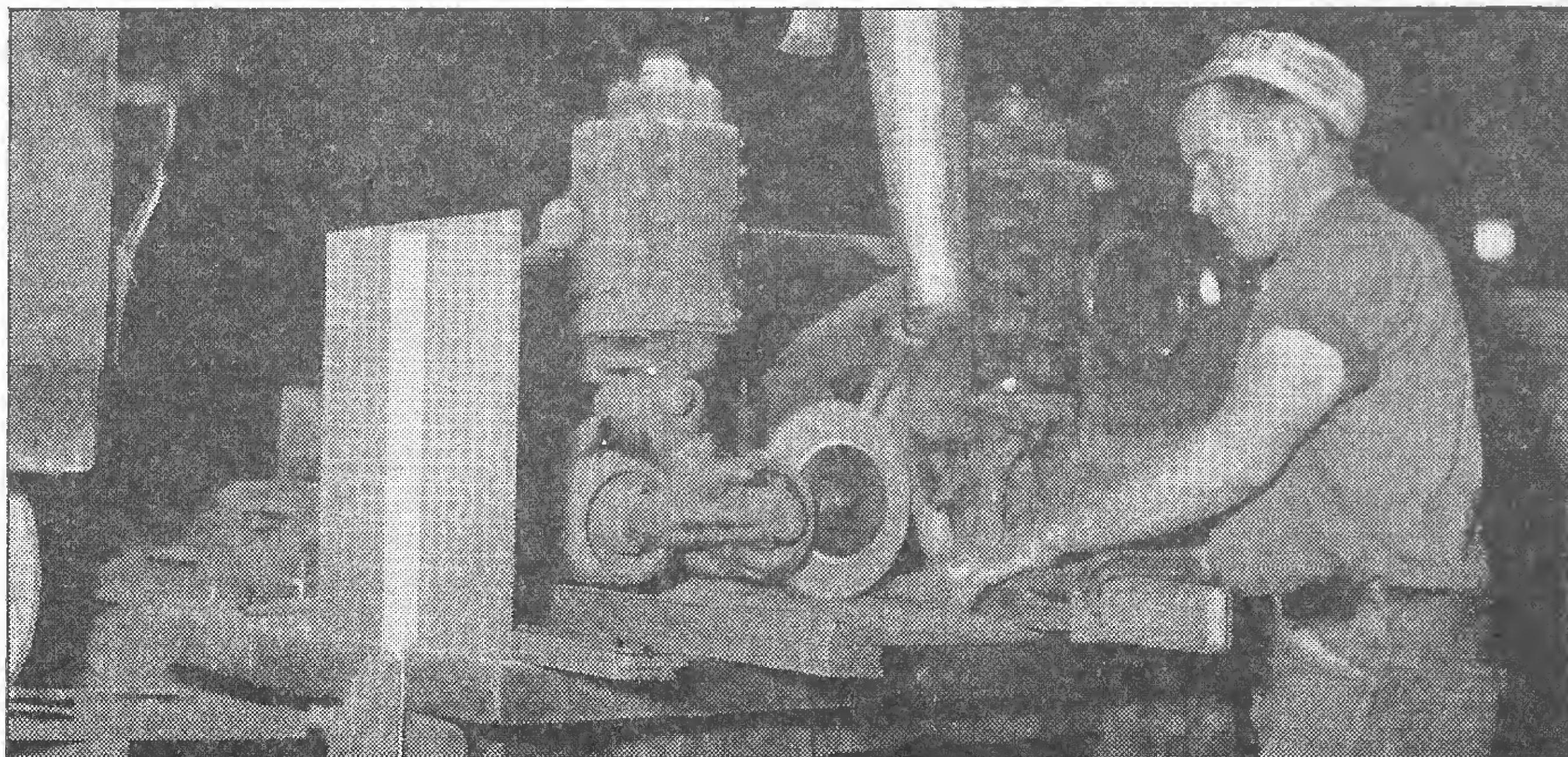
Each refrigerator is spray-painted with three coats, each application being baked for two hours in ovens steam-heated to 250° F. Under the present schedule \$2,400 worth of paint is consumed weekly. Because of its inflammable nature the main supply of paint is stored in a concrete and tile vault in the basement; only enough for immediate needs is kept in the paint department. Leaving the paint room, the refrigerator top is attached, trim is added, and legs and doors are applied.

During final inspection each door is given the "paper test"; the door is closed on a sheet of paper at intervals on all four sides. If the paper can be removed with the door shut, the box is not airtight; if the paper is held firmly, the door passes inspection.

In the shipping room the doors are tied shut to prevent damage in transit; the shelves are secured underneath; and the unit is covered by a tissue-paper padded box. From this point they move downstairs to the warehouse over an endless belt conveyor. Shipments of refrigerators, packed from 75 to 125 to the car, range from two to six car-loads a day, all by rail.

The Harder Refrigerator Corporation is the successor to a firm established in 1859 to manufacture threshing machines, a line which was discontinued in 1905. Meanwhile, in 1898, they had begun building silos, either furnishing the pre-fabricated materials to the farmers or completely installing the silo, as the purchaser preferred. In 1926 the silo business was sold and the manufacture of refrigerators, begun in 1916, became the sole activity of the plant.

Although the electric refrigerator, together with



Cutting Breaker Strips for Refrigerator Doors

the depression, did reduce production of ice-cooled units for a time, the turning point came in 1934, when sales showed a decided increase. In 1935 the improvement was even more marked; and in 1936 the Harder Corporation manufactured more refrigerators than in any other year in its history; and the prospects for 1937 are extremely bright. Definitely, the ice refrigerator is on its way back.



Final Inspection

Government Ownership

(Continued from page 39)

favor a policy of government ownership in view of these facts. The railroads no longer have a monopoly of transportation. They are subject to regulation by commissions, both state and federal, which prevent any possible repetition of practices indulged in in the past, and for which no excuses are offered. Under such restraining influences private enterprise offers better service and greater opportunity to employes than can ever be possible under public ownership. If you would deny this, point out a few of the outstanding men holding public office and compare their salaries with those of men in similar posts in private companies. Admittedly, public positions of responsibility are too poorly paid and tenure of office is too uncertain to make them attractive to men of ability, and this would be no less true were the railroads taken over by the government.

It is unnecessary to cite in detail this country's experience with government operated railroads during the war. Chaos prevailed. The individual carriers were returned to their private owners in

such condition that the expenditure of many millions was necessary to restore them to efficient operating condition. Motive power, cars and structures of inadequate design were parceled out over the country without regard to the requirements of local conditions of operation. To correct the condition, the government loaned large sums to the carriers.

Don't be fooled by the promises of those who want you to try something new to replace the system of private ownership which has worked out to the advantage of all concerned for more than a century. When government bureaus can demonstrate that any of their ideas can work successfully through a period but one-tenth as long, give them serious consideration. Until that time your security, both social and economic may much better be entrusted to a system the results of which are known from your own experience to be satisfactory and dependable, not dependent on the whim of those whose responsibility as elected office-holders may terminate at the end of four years.

News to You

GEOPGRAPHICAL facts, which are quite contrary to established notions, are brought to light by a careful examination of the map. Relative locations of certain points are found to be quite different from the general impression concerning them. This is pointed out by the Touring Bureau of the California State Automobile Association, which is called upon to answer requests from motorists for all kinds of information. For example:

Reno, Nevada, is 100 miles farther west than Los Angeles, and Jacksonville, Florida, is farther west than Cleveland, Ohio.

The westernmost point of Alaska is farther west of San Francisco than New York is east.

From Detroit to Canada the traveler moves southward.

New York lies to the west of some cities on the Pacific Coast of South America.

Santa Barbara, by reason of its location, sees the sun both rise and set in the Pacific.

Through the Panama Canal from the Pacific to the Atlantic the direction traveled is not east, but northwest; from the Atlantic to the Pacific, not west, but southeast.—*Rays of Sunshine*.

It's Very Obvious

About the only thing the government hasn't tried to regulate is our diet, but if it keeps adding new taxes it will do that rather effectively.

The
Delaware and Hudson Railroad
CORPORATION
BULLETIN

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DELAWARE AND HUDSON BUILDING,
ALBANY, N. Y.

PUBLISHED MONTHLY by The Delaware and Hudson Railroad Corporation, for the information of the men who operate the railroad, in the belief that mutual understanding of the problems we all have to meet will help us to solve them for our mutual welfare.

All communications should be addressed to the Supervisor of Publications, Delaware and Hudson Building, Albany, N. Y.

Vol. 17

March 1, 1937

No. 3

Start Here

YESTERDAY we read of another accident in which a big tractor-trailer milk truck was in collision with a privately owned sedan. Among the details it was recorded, as is so often the case, that "the drive shaft of the truck broke," apparently thus relieving all concerned from further responsibility.

Last year, 1936, recorded the staggering total of 38,500 lives lost in needless automobile accidents. Much is said about the necessity for limiting passenger vehicles to 50 miles per hour and more rigid examination of cars and drivers.

Yet the company which owns, or more correctly speaking, operates the truck mentioned in the opening paragraph, had, before this last "mishap," no less than 32 claims, totaling \$131,227, against it for personal injuries and property damage caused by its trucks. This became public knowledge when the Empire Trucking Company, Inc., of Utica, N. Y., filed a petition for reorganization under Section 77B of the Bankruptcy Law.

When some action is taken to compel every owner and operator of motor vehicles to prove that he is financially responsible for any damage that may be done to others, a long step will have been taken in the direction of safety. This will automatically eliminate the person who buys a machine for from \$10 to \$100, practically no car in this class being in safe and serviceable condition. Instead of working a hardship on such drivers such a prohibition would protect them against themselves, though they might not appreciate it, and, more important, it would protect the rest of us.

That long distance motor hauling of milk and other bulk commodities cannot be done profitably if such protection is provided by liability insurance or otherwise is apparent from the financial difficulties of the Utica concern. Nor can passenger transport be made safe and profitable for long distances over the highways. The press recently featured the setting aside by one of the big bus companies of the sum of \$20,000 as "self insurance" against claims resulting from injury to its passengers in its hundreds of buses. Could anything more silly in the way of a gesture be made? Most prudent drivers of pleasure cars, who are concerned with only one light vehicle and an average of three occupants, carry as much protection as the law demands for this great corporation, using the public highways provided at public expense as its place of business, and most of its stock in trade, to provide for its thousands of passengers and tens of thousands of potential victims unless they head for the ditch as they meet the roaring monsters.

Here is the logical starting point for a campaign to reduce accidents.

Colds

ARE you one of those heroic souls who "never gives in to a cold"? If so, you are in the group for whom the undertaker is so often called within 48 hours after the doctor arrives, pneumonia or pleurisy having counted another victim.

Of course it hasn't gone that far yet or you would not be reading these doleful lines. Thus far, you only drag in to "work," weepy-eyed and sneezing, to share your sorrow with those so unfortunate as to have to be near you. No hero medal is yours, rather, you are a public health enemy. Far better that you take care of your cold in its early stages. Better yet that you avoid it entirely by getting sufficient sleep, wearing proper clothing for the particular conditions prevailing at various times rather than going by the calendar or the latest fashion.

A cold is said by doctors to be nature's warning that the body is being abused in some way, usually lack of sufficient rest, and corrective action should be taken at once. Better take a day to prevent a cold than three to cure it.

In any event, don't let the he-man idea run away with your common sense. This is not a suggestion that you absent yourself from duty on the pretext of illness. It is the duty of everyone to take reasonable precautions to safeguard his health

and that of his fellows. Most of us, theoretically at least, have not over 8 hours of work, 8 hours of "play," and 8 hours for sleep each day. The last is the most important to our health.

Power

TO those who are watching with interest the latest developments in the realm of motive power the recent decision of the United States Navy to propel its two newest battleships by steam turbines connected to the propeller shafts through reduction gears is of no little significance. The last five battleships built previous to this time were driven by electric generators and motors. After exhaustive tests and studies of the conditions to be met, Rear Admiral G. H. Bowen, chief of the bureau of engineering, states that the elimination of motors and generators would mean a saving in weight of 20 to 25 per cent in the power generation and transmission machinery.

This would seem to have an important bearing on the use of motor-generator equipment in locomotives, the design of which must be radically altered to offset the increased weight and space occupied by electrical equipment. However, no definite decision can fairly be reached until service tests prove that they will or will not be satisfactory in actual operation. Too many new ideas have been condemned without a fair trial.

Reputation

A GOOD reputation is not something that can be put on ice and preserved," says a well-known writer. "Like its synonym, good will, it must be freshly earned each day."

Last month we told of an instance in which a shipper was greatly pleased by prompt handling given his shipment over our line. What have I done since that time to help maintain that good reputation—to add to that store of good will? Just ask yourself that question. Are you satisfied with the answer?

A good reputation is only earned by the long, slow process of serving others, whether in the case of an individual or a corporation, which is, after all, only a group of individuals working together. A single failure or slip on the part of any of us hurts that reputation more than we realize. We may be 100 per cent 9 times but a failure on the tenth brings the average way down.

Whether a company or an individual can continue to be successful in business depends entirely on reputation. If our company fails, what becomes of us?

It must not fail. Its reputation must be sustained, improved wherever possible, by our efforts each day. It cannot be "put on ice and preserved."

Grade Crossings

DEATHS resulting from grade crossing accidents in the first ten months of 1933 totaled 1,138 as compared with 1,286 during the same period of 1935, according to Association of American Railroads, figures. Personal injuries in such accidents in the ten months' period in 1936 numbered 3,754, an increase of 188 over 1935. In all there were 3,246 grade crossing accidents during that time, an increase of 250.

In the month of October alone, 178 persons were killed and 488 were injured against 159 deaths and 481 injuries in October 1935.

That high train speed does not seem to be an important factor in grade crossing accidents is shown by an analysis by the Interstate Commerce Commission of such accidents that took place in the first six months of 1936. Instead, they found that as the speed of trains increased the number of grade crossing accidents decreased. More than 52 per cent of such accidents took place either when trains were standing still or were moving nineteen miles an hour or less.

"On Time"

(Continued from page 38)

a tiny brass or gold screw, the operators working with the aid of magnifying glasses. Six screws are placed in holes in the finished wheel which is then supported on garnet bearings and tested for balance. If the whirling wheel comes to a dead stop without rocking it is perfectly balanced, a thing that seldom happens. Fitted with a supply of screws of various sizes, and scales delicate enough to weigh a pencil mark, the operator substitutes screws of varying weights until the wheel is in exact balance.

The assembly of a high grade watch is accomplished in steps, much like automobile building. Several parts go into a sub-assembly, moving with other sub-assemblies from other departments until the final assembly and inspection is reached. Altogether there are nearly 3,800 operations in the manufacture of a 23-jewel watch, about half of which are inspections.

The preliminary timing of all watches is done on recording machines in which microphones and amplifiers cause the ticks of the watch to actuate a recording device which prints a record of the performance on a tape passing around a rapidly re-

volving drum. Thus it may be seen at a glance whether the watch is fast or slow, or regular or irregular, and adjustments made as required.

Correction for temperature variation is made after running the watch in an oven at 95 degrees for 24 hours after which it is held at 40 degrees in a refrigerator for a similar period. The difference between the rates obtained from these two runs is the temperature error of the watch, the screws in the balance wheel being adjusted to bring it within the allowable variation, which depends upon the price of the watch.

Adjustment to position is made by running the watch for 24-hour periods in each of the positions specified for its grade. A watch so adjusted will keep excellent time. However, it should be remembered that no watch can keep absolutely perfect time. It gains or loses. The final adjustment is made to assure that the gain or loss is small—within the tolerance allowed by the price class—and that the variation is consistent.

Perhaps your watch will be regarded with greater respect, now that you are better acquainted with it.

People

THERE are 2,073,300,000 people in the world, according to *Human Biology*, a new book by Dr. Raymond Pearl and Sophie A. Gould of the Johns Hopkins University School of Hygiene and Public Health. They predict that the peak of the world's population will be about 2,645,500,000 which will be attained in 2921. The average density of world population at present is about 40 persons to the square mile, approximately that of the United States. Only a little more than 5 per cent of the land area of the earth contains 52.5 per cent of its population. In Japan the population increased more than 1,000,000 during the year ending October 1, 1936.

Neat Response

Jones was at a dinner party. He was shy and could never summon up courage to speak because of his inability to say anything neat. All the evening he had been trying to think of something nice to say to his hostess. At last he thought he saw his chance.

"What a small appetite you have, Mr. Jones," said his charming hostess with a smile.

"To sit next to you," he replied gallantly, "would cause any man to lose his appetite."—*Watchman-Examiner*.

Gleanings

THE oldest newspaper is published in Peiping, China. It is called the Pching-Pao and has been in existence for over a thousand years. Over 800 editors of this paper have been beheaded for printing articles not pleasant to the authorities.

God gives every bird its food, but does not throw it into the nest.—*J. G. Holland*.

A cow has a stomach capacity ten times that of a horse.

The heart does not beat at a constant rate. It ranges under perfectly normal conditions from 50 to 100 beats a minute.

There are 3½ pounds of salt in every 100 pounds of ocean water.

The most ancient writing of which we have any knowledge is that by the first inhabitants of Babylonia, 6,000 years ago.

Only one person in 10, over 21 years old, has perfect vision.

It is claimed that the largest artesian well in the world is on the Oasis Ranch, near Roswell, N. M.; 9,100 gallons of water a minute.

Only one American man in 200 is six feet tall or over.

The population of the United States averages 41.3 persons to the square mile.

Sheffield plate was discovered by accident in 1742 when a Sheffield mechanic used silver and copper in making repairs to the handle of a pocket-knife.

Osmium is the heaviest substance in the world. It weighs 1,402½ lbs. per cubic foot, which is 98 per cent more than lead.

It takes both your enemies and your friends to put you down and out—the enemy to slander you, and the friend to carry the news to you.

For Women Only

The last word in the dictionary is "ZYXT." A correspondent says that so far as he's concerned any woman can have it.—*Everybody's Weekly (London)*.

Clicks from the Rails

High Speed Freight Service

was illustrated in a story told by T. V. Buckwater, vice-president of the Timken Roller Bearing Co. The Dodge Motor Car plant at Detroit needed a large steel die block which was made immediately by the Timken people and loaded on a flat car. Leaving Canton in a fast freight at 9 P. M., the block was delivered the following morning. When it was placed on a planer it was still so hot that workmen had to turn a hose on it before it could be machined.



An Elephant Tends Switches

on an Indian lumber company's railroad where three branch lines converge into the main line, according to *Dumb Animals*. A single three-position stand is used to control the stub-end switch, the positions being indicated by white, black, and red discs. Discs of corresponding colors are mounted on the front ends of the narrow-gauge locomotives. When a train approaches the elephant throws the switch to the color displayed on the engine. His work is so reliable that he needs no supervision.



A Pet Squirrel

which escaped in a Pullman car gave the New Orleans yard force a hard day's work. All attempts to drive, coax, or bribe the squirrel from his hiding place in the space occupied by the air-conditioning apparatus having failed, a vigorous application of fumigation was tried. The fugitive was finally found, still alive, near the fresh air intake.



The World's Safest Railroad

as far as fatal accidents are concerned is the New South Wales Government System which has carried 1,450,000,000 passengers during the past ten years without a single fatality.

Quiet Was Requested

of railroad employes working near the Oliver Springs, Tenn., high school one day recently while the funeral of General Harvey M. Hanna, chairman of the Tennessee Railroad Commission was being held in the auditorium. While the service was in progress a passenger train stopped at the nearby station and departed again so quietly that most of the large audience were unaware of it. A few days later the division superintendent received a letter from the school principal complimenting him for "having employes who are so courteous and considerate of other people."



Train Derailments

caused by dragging car or locomotive parts, will be reduced if not eliminated on the Pennsylvania Railroad by the installation of a new detector device 8,000 feet on either side of interlocking plants. Anything hanging lower than the top of the rails causes an electrical contact which automatically causes the track and locomotive cab signals to give stop indications. Upon receiving such a warning the train must be stopped and examined to see if it is in safe condition to proceed.



A Dog Was Shipped

in de luxe fashion from Silver Spring, Md., recently. The crate was built in the shape of a dog house, with slanting roof; there were rope handles at both ends; ample provision was made for ventilation; and a water cup was fastened inside with a spout for filling from the outside. The crate bore the following poetic legend:

Here am I in my little crate,
My eyes to Heaven look
up.
Please give me this day my
daily break
And fill my little cup.

The Turnable Problem

is uniquely solved on a Diesel rail car recently built for the French Eastern Railway — the unit carries its own turntable underneath in the form of a revolving frame secured to the underframe with clamps for grasping the rails, and a pneumatic arrangement for lifting the wheels clear of the track. This feature eliminates having operating controls at both ends of the car, which cuts the revenue-earning space, when the unit is to be used on lines where turntables or wyes are not available.



A Purse Containing \$6,500

was mislaid by a Korean while traveling on the Mukden-Antung passenger train. Boarding the train, he had hid the purse behind the lavatory, then went to the dining car where he drank too much whiskey and left the train at Mukden without his money. Eventually he managed to trace the car at the Shakako shops, near Dairen, where he found the purse with his money intact.



The World's Highest Railway

is probably the Antofagasta (Chile) & Bolivia, the Collahuasi branch of which reaches an altitude of 15,809 feet in Bolivia, while at another point it is 15,705 feet high. This line climbs the Andes on a 3 per cent grade, terminating at La Paz, Bolivia, at 12,143 feet. The Peruvian Central Railways is a close second with a line which attains an altitude of 15,806 feet.



The Busiest Railroad Tracks

in the world, according to a United Press dispatch, are those of Great Britain, an average of 54 trains passing over every mile of track daily. Second in line are the Belgian railways with an average of 43 trains using each mile of track every day.

Friendship

DON'T flatter yourself that friendship authorizes you to say disagreeable things to your intimates. The nearer you come into relation with a person, the more necessary do tact and courtesy become. Except in cases of necessity, which are rare, leave your friend to learn unpleasant things from his enemies; they are ready enough to tell him.—HOLMES.